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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,881	10/19/2001	Tuomo Syvanne	BER-024	8294
26717	7590	09/23/2005	EXAMINER	
RONALD CRAIG FISH, A LAW CORPORATION PO BOX 820 LOS GATOS, CA 95032			- ISMAIL, SHAWKI SAIF	
			ART UNIT	PAPER NUMBER
			2155	

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,881

Applicant(s)

SYVANNE, TUOMO

Examiner

Shawki S. Ismail

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

RESPONSE TO AMENDMENT

1. This communication is responsive to the amendment received on June 27, 2005. Claims 1-25 have been amended. Claims 1-27 are pending.

The New Grounds of Rejection

2. Applicant's amendment and arguments with respect to claims 1-27 received on June 27, 2005 have been fully considered but they are deemed to be moot in view of the new grounds of rejection.

Claim Rejections - 35 USC §102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1-7, 12-24, and 29-34, are rejected under 35 U.S.C. 102(e) as being anticipated by **Oki et al.**, (Smith) U.S. Patent No. **6,735,206**.
5. As to claim 1, Oki teaches a method for handling dynamic state information used for handling data packets, which arrive at a network element node of a network element cluster, said network element cluster having at least two nodes and each node handling

separate sets of data packets (see Fig. 1 and 2, Oki teaches cluster of server nodes and handling information used for handling data packets)

Maintaining in said first node a first, node-specific data structure comprising entries representing state information needed for handling sets of data packets handled in said first node (see Fig. 2, col. 5, lines 42-64, interface node/server node 103 maintains node-specific data structure needed for handling sets of data packets)

maintaining in said first node in addition to said node-specific data structure a second, common data structure comprising at least entries representing state information for data packets handled in at least one other node of said network element cluster, the contents of said common data structure effectively differing from the contents of said node-specific data structure and including copies of all state information entries maintained in a node specific data structure of said at least one other node and needed for handling sets of data packets in said at least one other node, said entries being maintained according to information on how different sets of data packets are distributed among the nodes of the network element cluster (see Fig. 2, col. 5, lines 42-64, interface node/server node 103 maintains a second data structure representing information for data packets handled at other nodes)

dynamically changing distribution of at least one set of data packets from said at least one other node to said first node in the network element cluster, and providing said first node with respective changed distribution information (col. 7, lines 34-55, Oki uses a packet distribution table (PDT) to implement the load balancing among the cluster of nodes),

in response to said changed distribution information, selecting the state information entries of said at least one re-distributed set of data packets from said second common data structure and transferring them to said first node-specific data structure of said first node (Oki teaches that if a server fails then another server will take over processing and a check-pointing process ensures that the configuration data will be present in the new server that was before available in the old server in order for the new server to process the packet col. 7, lines 34-55).

6. As to claim 2, Oki teaches a method according to claim 1, further comprising:

allocating to each node belonging to said network element cluster certain node-specific distribution identifiers, each node having separate node-specific distribution identifiers allocated to it (col. 7, lines 34-42),

handling at least a plurality of data packets so that a data packet is handled in that node of said network element cluster, to which node a distribution identifier calculated using certain field(s) of said data packet is allocated (col. 7, lines 34-42),

maintaining in a plurality of entries of said node-specific and common data structures distribution information relating to the distribution identifier, which corresponds to the set of data packets related to the respective entry (col. 7, lines 34-42).

7. As to claim 3, Oki teaches a method according to claim 2, further comprising:

reallocating said distribution identifiers to the nodes of said network element cluster (col. 7, line 56 – col. 8, line 3),

if said reallocation results in a new distribution identifier being allocated to a node, said new distribution identifier being a distribution identifier not allocated to said node at the time of the reallocation, identifying in the common data structure of said node the entries corresponding to said new distribution identifier, and adding said entries to the node-specific data structure of said node (see Fig. 5b, col. 7, line 56 – col. 8, line 3, col. 8, lines 41-52), and

if said reallocation results in an old distribution identifier not being allocated to a node anymore, said old distribution identifier being a distribution identifier allocated to said node at the time of the reallocation, identifying in the node-specific data structure of said node the entries corresponding to said old distribution identifier, and clearing said entries from the node-specific data structure of said node (see Fig. 5b, col. 7, line 56 – col. 8, line 3, col. 8, lines 41-52).

8. As to claim 4, Oki teaches a method according to claim 2, further comprising: adding a new entry to said node-specific data structure in a first node (see Fig. 5b, col. 8, lines 41-52),

communicating said new entry at least to a second node of the network element cluster (see Fig. 5b, col. 8, lines 41-52), and

adding an entry corresponding to said new entry to the common data structure of said second node (see Fig. 5b, col. 8, lines 41-52).

9. As to claim 5, Oki teaches a method according to claim 4, further comprising: adding an entry corresponding to said new entry to the common data structure of said first node (see Fig. 5b, col. 8, lines 41-52),

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10. As to claim 6, Oki teaches a method according to claim 1, further comprising maintaining in said common data structure of said node entries representing state information needed for handling sets of data packets handled in said node (col. 7, lines 34-42)

11. As to claim 7, Oki teaches a method according to claim 1, wherein said state information comprises the source address field and/or the destination address field of an Internet Protocol header, and/or port header fields) of a Transmission Control Protocol header and/or port header fields of a User Datagram Protocol header, and/or the identifier header field of an Internet Control Message Protocol header, and/or a Message Identifier field of an Internet Security Association and Key Management Protocol header, and/or an Initiator Cookie field of an Internet Security Association and Key Management Protocol header, and/or the Security Parameter Index field of a security header relating to the IPSec protocol suite, and/or a Session ID field relating to the Secure Sockets Layer protocol, and/or an HTTP Cookie field relating to the Hypertext Transfer Protocol (col. 2, line 66 – col. 3, line 6, col. 3, lines 31-35).

12. As to claim 8, Oki teaches a method according to claim 1, wherein said state information comprises information identifying an authenticated entity (col. 4, lines 44-67).

13. As to claim 9, Oki teaches a method according to claim 1, wherein said state information comprises information identifying a secured tunnel, within which data packets of the corresponding set are tunneled (col. 4, lines 44-67).

14. As to claim 10, Oki teaches a method according to claim 2, wherein said distribution identifier is a hash value and a hash function is used for calculating a hash value using certain field(s) of a data packet (col. 2, lines 50-58).

15. As to claim 11, Oki teaches a method according to claim 2, characterized in that said distribution information is said distribution identifier (col. 2, lines 50-58).

16. As to claim 12, Oki teaches a method according to claim 2, wherein said distribution information is information needed for calculating said distribution identifier for the corresponding data packet (col. 2, lines 50-58).

17. As to claim 13, Oki teaches a method according to claim 2, characterized in that said certain field(s) for calculating a distribution identifier comprise the source address field and/or the destination address field of an Internet Protocol header, and/or port header fields of a Transmission Control Protocol header and/or port header fields of a User Datagram Protocol header, and/or the identifier header field of an Internet Control Message Protocol header, and/or a Message Identifier field of an Internet Security Association and Key Management Protocol header, and/or an Initiator Cookie field of an Internet Security Association and Key Management Protocol header, and/or the Security Parameter Index field of a security header relating to the IPSec protocol suite, and/or a Session ID field relating to the Secure Sockets Layer protocol, and/or an HTTP Cookie field relating to the Hypertext Transfer Protocol (col. 2, line 66 – col. 3, line 6, col. 3, lines 31-35).

18. As to claims 14-27, they contain similar limitations as in claims 1-14 as discussed above; therefore, they are rejected under the same rationale.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Applicant Admitted Prior Art (AAPA)** and in view of **Oki et al.**, (Oki) U.S. Patent No. **6,735,206**.

21. As to claim 1, AAPA teaches a method for handling dynamic state information used for handling data packets, which arrive at a network element node of a network element cluster, said network element cluster having at least two nodes and each node handling separate sets of data packets (col. 5, lines 3-15), said method comprising (see Fig. 1A, and 1B, page 2, paragraph [0018]; AAPA teaches a cluster of nodes CA and each node handling separate sets of data packets):

Maintaining in said first node a first, node-specific data structure comprising entries representing state information needed for handling sets of data packets handled in said first node (see Fig. 1A, and 1B, page 2, paragraph [0018]; AAPA teaches maintaining in each node a data structure 11b, 12b, and 13b used for handling data packets);

maintaining in said first node in addition to said node-specific data structure a second, common data structure comprising at least entries representing state information for data packets handled in at least one other node of said network element cluster, the contents of said common data structure effectively differing from the contents of said node-specific data structure and including copies of all state information entries maintained in a node specific data structure of said at least one other node and needed for handling sets of data packets in said at least one other node, said entries being maintained according to information on how different sets of data packets are distributed among the nodes of the network element cluster (see Fig. 1A, and 1B, page 2, paragraph [0018]; AAPA teaches maintaining in each node a data structure 11a, 12a, and 13a use for synchronizing the state data structure of the nodes with each other).

AAPA teaches the claimed invention as described above. AAPA does not explicitly teach dynamically changing distribution of at least one set of data packets from said at least one other node to said first node in the network element cluster, and providing said first node with respective changed distribution information and selecting the state information entries of said at least one re-distributed set of data packets from said second common data structure and transferring them to said first node-specific data structure of said first node.

Oki teaches a method and apparatus that uses a destination address to perform fast lookup to determine a service for a packet. Oki uses a packet distribution table (PDT) to implement the load balancing among the cluster of nodes. Oki teaches that if

a server fails then another server will take over processing and a check-pointing process ensures that the configuration data will be present in the new server that was before available in the old server in order for the new server to process the packet (col. 7, lines 34-55).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the teaching of AAPA and Oki in order to forward packets to server nodes in an efficient and scalable manner and to increase the performance of handling data packets.

Response to Arguments

22. Applicants' arguments have been fully considered. The examiner has attempted to respond to the arguments in the body of the Office Action.

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

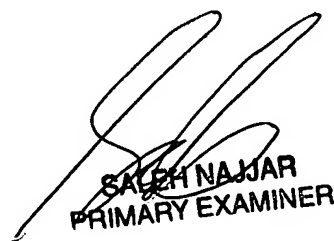
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawki S Ismail whose telephone number is 571-272-3985. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shawki Ismail
Patent Examiner
September 19, 2005



SALEH NAJJAR
PRIMARY EXAMINER